

csem swiss center for electronics and microtechnology

CSEM presents itself

Centre Suisse d'Electronique et de Microtechnique

CSEM – some key facts

Private company, incorporated, with about 70 Shareholders

*2003 :
Revenues ~ 52 MCHF, Employees ~ 280*

Activities: Applied research, industrialization of technologies and product development

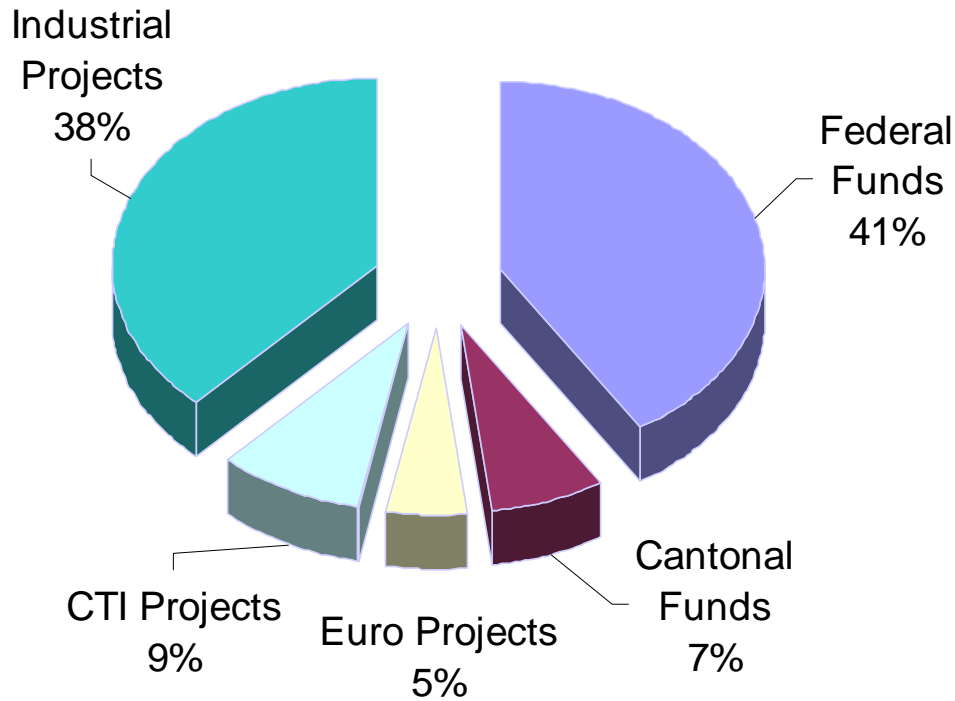
Areas of activity: Micro- and Nanotechnologies, System Engineering

*Headquarters in Neuchâtel,
Additional sites in Zurich and Alpnach*

Why CSEM in Neuchâtel ?

- CSEM was created on September 3, 1984 (20 years!) out of two institutes dedicated to R&D in watch making
 - Centre Electronique Horloger (CEH)
 - Laboratoire Suisse des Recherches Horlogères (LSRH)
- Neuchâtel is geographically placed approximately in the center of the Swiss watch making region
- Neuchâtel has a university (approx. 3000 students)

Revenues



**Total 2003:
52 MCHF**

Areas of Activity

- Microelectronics
- Systems Engineering
- Mechatronics
- Microsystems
- Nanotechnology
- Photonics
- Robotics

*With a special emphasis
to Microsystems Technology
(MEMS, MOEMS, BioMEMS,
RF, etc.), a very fast
growing new product technology*

CSEM – an innovation accelerator

CSEM Technology in its start-ups (1997-2003)



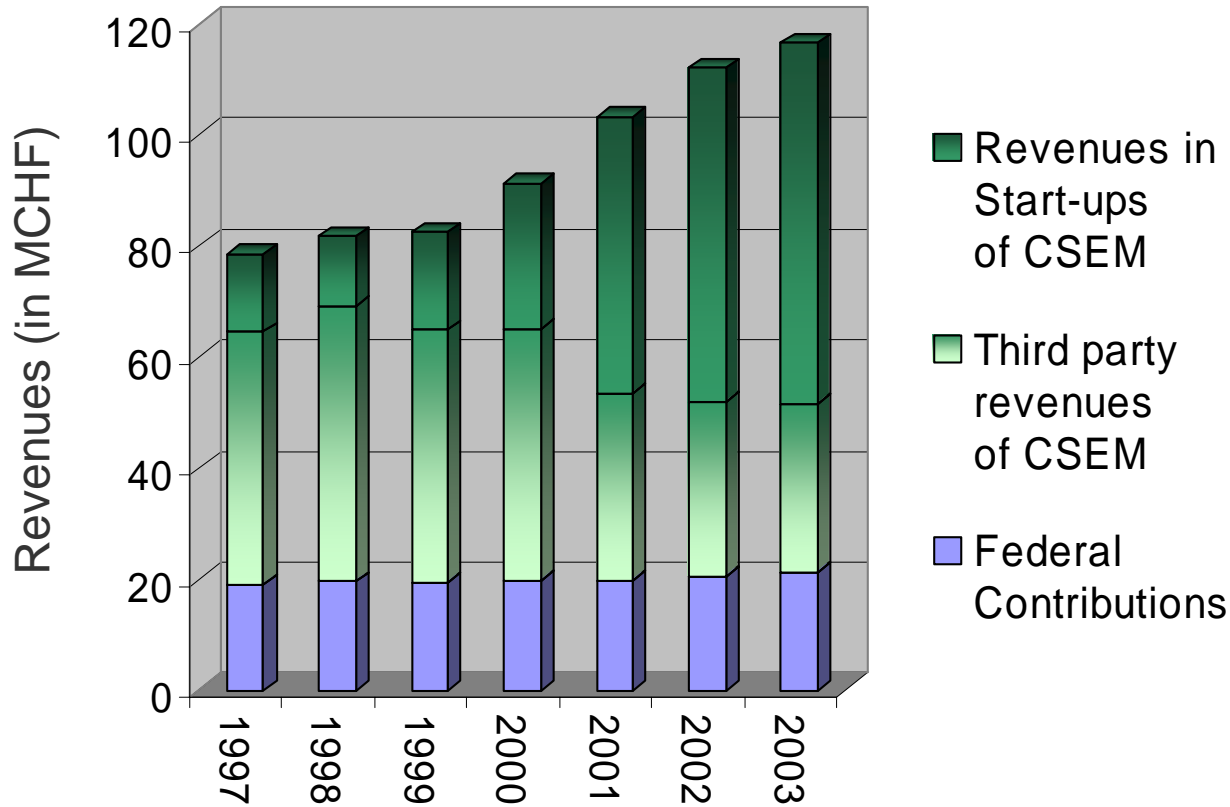
Revenues (2003):
~ 60 MCHF

VC Capital (1998-2003):
More than 100 MCHF

More than 300 new
Jobs

CSEM – an innovation accelerator

Impact of CSEM



A perfect example of
„Public Private Partnership“

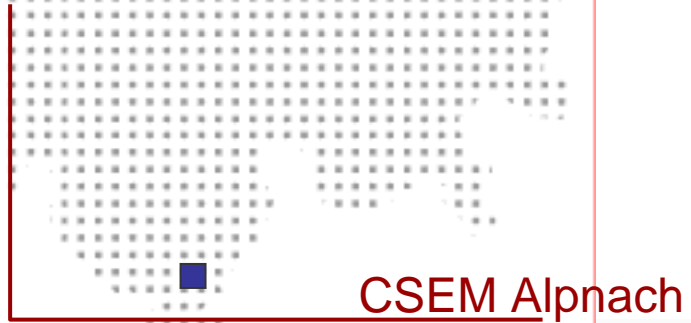
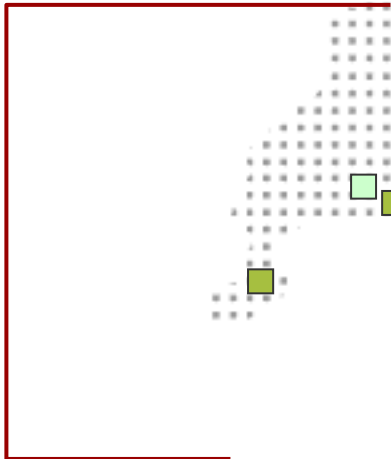
CSEM – an innovation accelerator

CSEM's network in Switzerland



CSEM Neuchâtel

CSEM Zürich



CSEM Alpnach



CSEM – an innovation accelerator

CSEM's network in Europe



CSEM – an innovation accelerator

Prizes recently received

IEEE Solid-State Circuits Technical Field Trophy 2004



Swiss Technology Award 2004



European IST Trophy 2004



IHMA Holography Trophy 2003



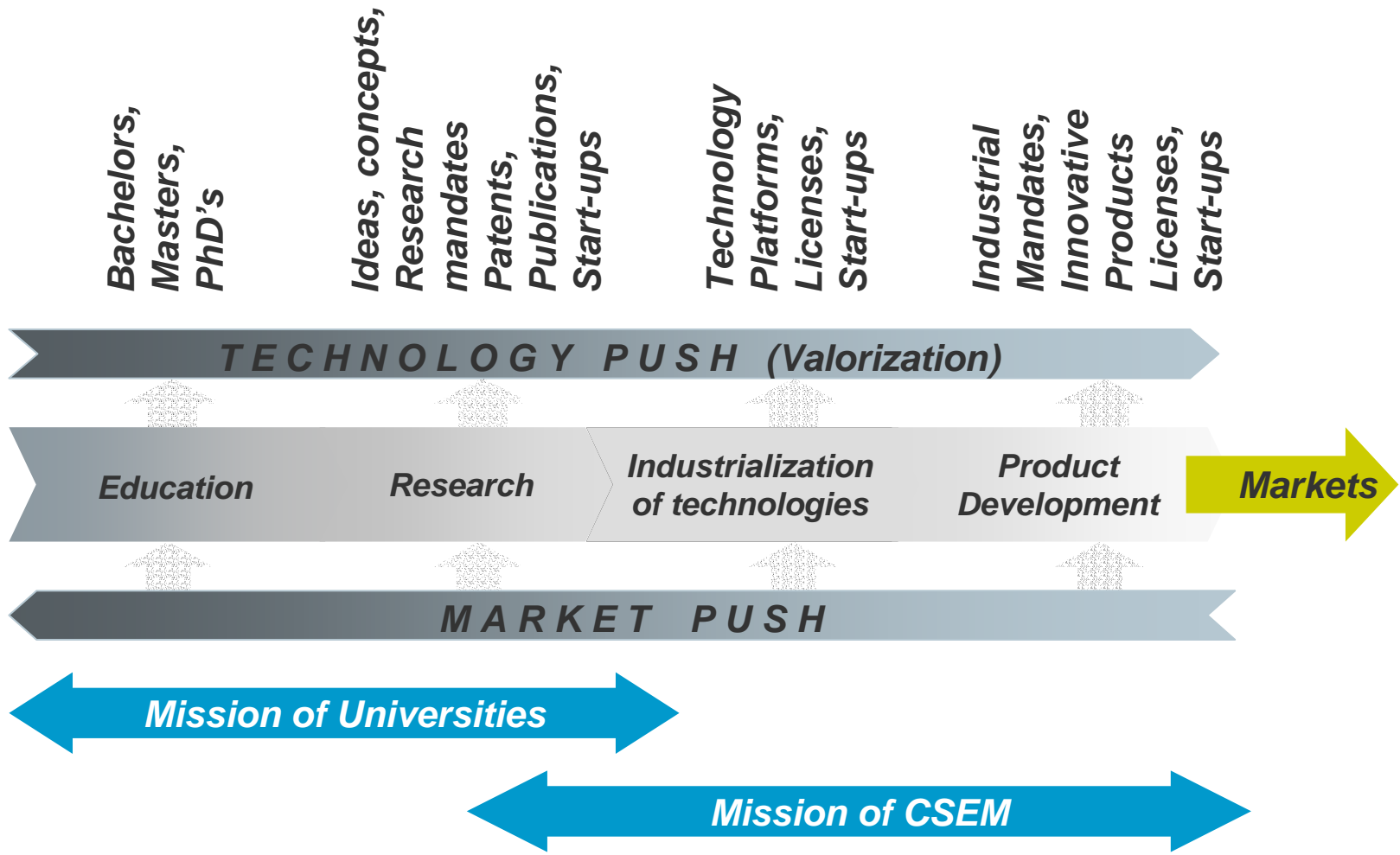
German Science Foundation Award 2002



CSEM's Mission: Accelerate Innovation

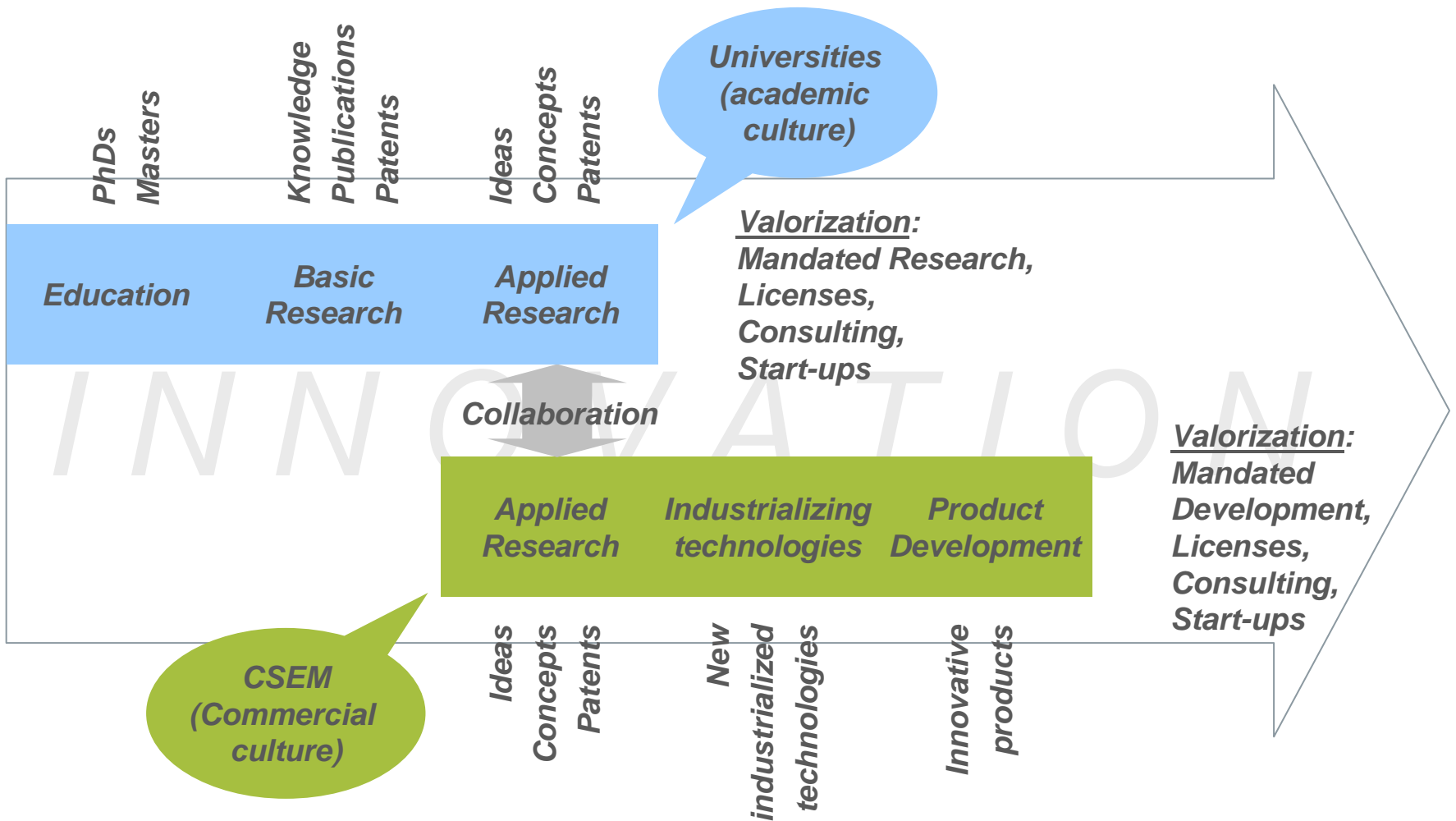
CSEM – an innovation accelerator

The Innovation Chain in Micro- et Nanotechnology



CSEM – an innovation accelerator

Roles of CSEM and of the Universities



CSEM – an innovation accelerator

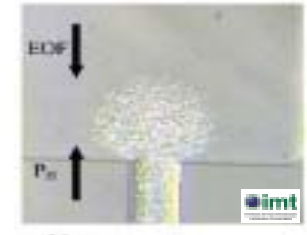
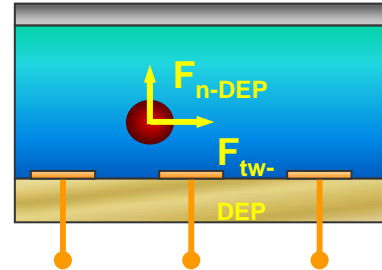
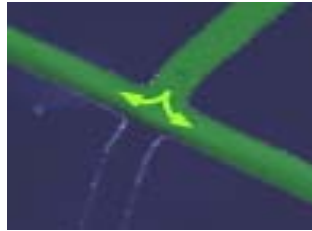
Roles of Federal and Local Governments

- Federal Government: Long Term Contract
 - Applied Research Program, annually submitted:
divisional research, horizontal programs, funding IMT
 - Annual Presentation & Reviews by a group of experts
 - internal CSEM Research Committee to manage program

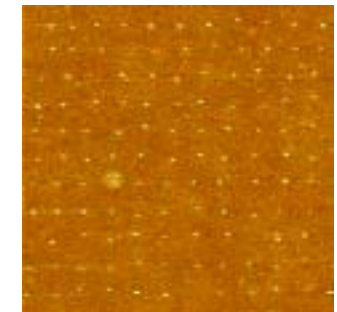
- Local Government: the Canton (State) is shareholder
 - no contribution to operating costs
 - support of extraordinary actions

I. Liquid Handling

- fluidic networks
- particle handling



- nanofluidics
- deposition of ultras small volumes
→ writing of microarrays, ...



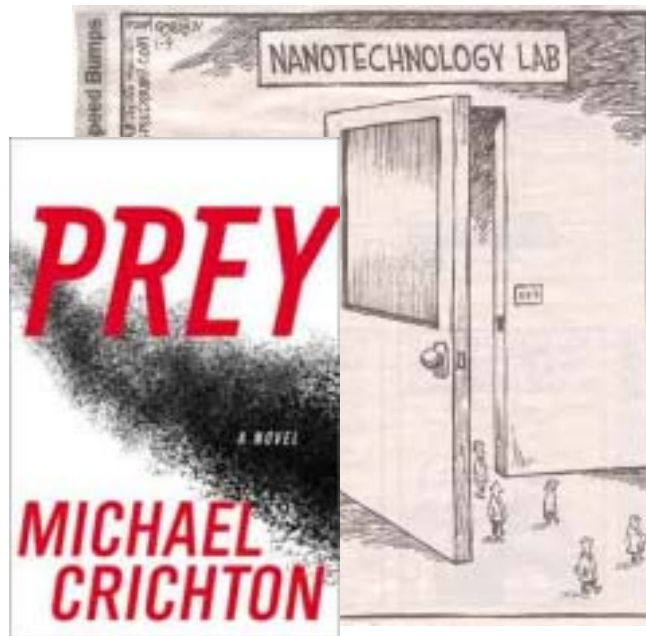
- operation of N probes in parallel,
PROBART for life science applications:
→ microarrays, HTS, NADIS, ...



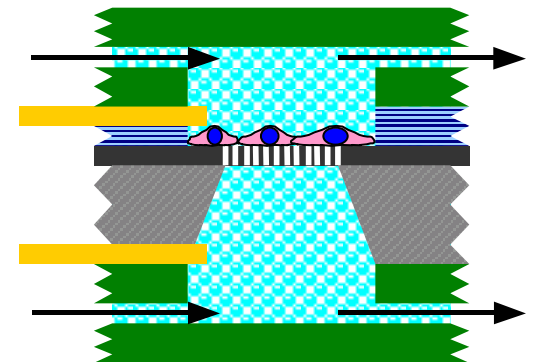
Application to Life Sciences

II. Nanomaterials / Risk Assessment

- nanoparticles (q-dots, CNT, ...)
- nanotopographies for cell adhesion



- nanoparticle translocation charact.
with European
partners, e.g.
U Glasgow ...



csem

Thank you for your attention.